WHAT IS CLAIMED IS:

1. A projection system comprising:

a light source;

at least one filter having a slit which controls a divergence angle of light emitted from the light source;

a scrolling unit which scrolls an incident beam;

a color separator, which separates an incident beam emitted from the light source according to color, the color separator comprising a plurality of dichroic filters, each filter reflecting light of one color and transmitting light of all other colors; and

a light valve which receives a plurality of color beams, separated by the color separator and transmitted by the scrolling unit, on corresponding color areas and forms a plurality of color bars by the scrolling of the color bars due to a rotation of the scrolling unit;

wherein a black bar is formed between adjacent color bars by controlling a distance between adjacent dichroic filters or controlling a width of the slit in the at least one filter.

2. The projection system of claim 1, wherein the scrolling unit comprises at least one lens cell and converts a rotation of the scrolling unit into a rectilinear motion of an area of the lens cells through which light passes so that the incident beam is scrolled.

3. The projection system of claim 1, wherein the distance between adjacent color bars is greater than a mean of the widths of the adjacent color bars.

4. The projection system of claim 1, wherein:

the plurality of dichroic filters comprise first, second, and third dichroic filters disposed parallel to one another, and satisfy the following expression:

$$a > \frac{(g_1 + g_2)}{\alpha 2\sqrt{2}}$$
$$b > \frac{(g_2 + g_3)}{\alpha 2\sqrt{2}}$$

wherein:

g1, g2, and g3 are the widths of first, second, and third color bars, respectively;

a is the distance between the first and second dichroic filters;

b is the distance between the second and third dichroic filters; and

$\alpha$ is a proportional constant.

5. The projection system of claim 2, wherein the at least one lens cell of the scrolling unit is spirally disposed.

6. The projection system of claim 1, wherein when the at least one filter comprises a spatial filter having a slit and the projection system is disposed to satisfy:

$$a > \frac{g}{\alpha\sqrt{2}} = \frac{wf_2}{\alpha\sqrt{2}f_1}$$
$$b > \frac{g}{\alpha\sqrt{2}} = \frac{wf_2}{\alpha\sqrt{2}f_1}$$

wherein

a is the distance between the first and second dichroic filters;

b is the distance between the second and third dichroic filters;

g is the width of each color bar;

w is the width of the slit in the spatial filter;

$f_1$ is the focal distance of the spatial filter;

$f_2$ is the focal distance of the scrolling unit; and

$\alpha$ is a proportional constant.

7. The projection system of claim 6, wherein when the at least one filter further comprises a trim filter with a slit width $t_1$, and a focal distance equal to that of the spatial filter; wherein the widths of the first and second color bars, $g_1$ and $g_2$, respectively, are controlled by the spatial filter and the width of the third color bar, $g_3$, is controlled by the trim filter according to the following equation:

$$g_1 = g_3 = w\frac{f_2}{f_1}$$
$$g_2 = t_1\frac{f_2}{f_1} \quad .$$

8. The projection system of claim 6, wherein when the at least one filter further comprises first and second trim filters with slit widths $t_1$ and $t_2$, respectively, and focal distances equal to that of the spatial filter, , wherein the width of the first color bar is controlled by the spatial filter and the widths of the second and third color bars are controlled by the first and second trim filters, respectively, according to the following equation:

$$g_1 = w\frac{f_2}{f_1}$$
$$g_2 = t_1\frac{f_2}{f_1} \quad .$$
$$g_3 = t_2\frac{f_2}{f_1}$$

9. The projection system of claim 1, wherein when the at least one filter comprises first, second, and third trim filters and the projection system is disposed to satisfy the following equation:

$$g_1 = t_1 \frac{f_2}{f_1}$$

$$g_2 = t_2 \frac{f_2}{f_1}$$

$$g_3 = t_3 \frac{f_2}{f_1}$$

wherein:

g1, g2, and g3 are the widths of the first, second, and third color bars, respectively;

t1, t2, and t3 are the widths of the slits in the first, second, and third trim filters, respectively;

f1 is the focal distance of each of the first, second, and third trim filters; and

f2 is the focal distance of the scrolling unit.

10. The projection system of claim 1, further comprising first and second fly-eye lens arrays disposed on a light path between the color separator and the light valve.

11. The projection system of claim 1, further comprising:

a first cylindrical lens, disposed in front of the scrolling unit, which reduces the width of light incident on the scrolling unit; and

a second cylindrical lens, disposed behind the scrolling unit, which returns the light transmitted by the scrolling unit to its original width.

12. The projection system of claim 11, further comprising first and second fly-eye lens arrays disposed on a light path between the color separator and the light valve.

13. The projection system of claim 12, further comprising a relay lens disposed on a light path between the second fly-eye lens and the light valve.

14. The projection system of claim 1, further comprising a polarization conversion system, disposed on a light path between the color separator and the light valve, which converts light emitted from the light source into light with a single polarization.

15. The projection system of claim 1, wherein the light valve comprises one of a liquid crystal display (LCD) and a liquid crystal on silicon (LCOS).

16. A method of forming a color image, in which a rising time and a falling time are required to change image signals for a plurality of color bars formed on a light valve, comprising:

providing a projection system comprising:

at least one filter having a slit

scrolling incident light from a light source;

separating light emitted from the light source according to color using a color separator which comprises a plurality of dichroic filters, each reflecting light of one color and transmitting light of all other colors;

forming a plurality of color bars by making a plurality of color beams, separated by the color separator and transmitted by the scrolling unit, incident on corresponding color areas of the light valve; and

forming a black bar between adjacent color bars by controlling a distance between adjacent dichroic filters or by controlling a width of the slit in the at least one filter.

17. The method of claim 16, wherein scrolling incident light is accomplished by converting a rotation of a scrolling unit into a rectilinear motion of a lens cell of the scrolling unit through which the incident light passes.

18. The method of claim 16, wherein the distance between adjacent color bars is greater than a mean of the widths of the adjacent color bars.

19. The method of claim 16, wherein the plurality of dichroic filters comprise first, second, and third dichroic filters, disposed parallel to one another, satisfying the following expression:

$$a > \frac{(g_1 + g_2)}{\alpha 2\sqrt{2}}$$

$$b > \frac{(g_2 + g_3)}{\alpha 2\sqrt{2}}$$

wherein:

g1, g2, and g3 are the widths of first, second, and third color bars, respectively;

a is the distance between the first and second dichroic filters;

b is the distance between the second and third dichroic filters; and

$\alpha$ is a proportional constant.

20. The method of claim 17, wherein the at least one lens cell of the scrolling unit is spirally disposed.

21. The method of claim 16, wherein when the at least one filter comprises a spatial filter having a slit, further comprising disposing the projection system according to the following expression::

$$a > \frac{g}{\alpha\sqrt{2}} = \frac{wf_2}{\alpha\sqrt{2}f_1}$$

$$b > \frac{g}{\alpha\sqrt{2}} = \frac{wf_2}{\alpha\sqrt{2}f_1}$$

wherein:

a is the distance between the first and second dichroic filters;

b is the distance between the second and third dichroic filters;

g is the width of each color bar;

w is the width of the slit in the spatial filter;

$f_1$ is the focal distance of the spatial filter;

$f_2$ is the focal distance of the scrolling unit; and

$\alpha$ is a proportional constant.

22. The method of claim 21, wherein when the at least one filter further comprises a trim filter with a slit width $t_1$, and a focal distance equal to that of the spatial filter, further comprising controlling the widths of the first and second color bars, g1 and g2, respectively,

by the spatial filter and controlling the width of the third color bar, g3, by the trim filter, according to the following equation:

$$g_1 = g_3 = w\frac{f_2}{f_1}$$
$$g_2 = t_1\frac{f_2}{f_1}$$

23. The method of claim 21, wherein when the at least one filter further comprises first and second trim filters with slit widths $t_1$ and $t_2$, respectively, and focal distances equal to that of the spatial filter, further comprising controlling the width of the first color bar by the spatial filter and controlling the widths of the second and third color bars by the first and second trim filters, respectively, according to the following equation:

$$g_1 = w\frac{f_2}{f_1}$$
$$g_2 = t_1\frac{f_2}{f_1} .$$
$$g_3 = t_2\frac{f_2}{f_1}$$

24. The method of claim 16, wherein when the at least one filter comprises first, second, and third trim filters, further comprising disposing the projection system according to the following equation:

$$g_1 = t_1\frac{f_2}{f_1}$$
$$g_2 = t_2\frac{f_2}{f_1}$$
$$g_3 = t_3\frac{f_2}{f_1}$$

wherein:

g1, g2, and g3 are the widths of the first, second, and third color bars, respectively;

t1, t2, and t3 are the widths of the slits in the first, second, and third trim filters, respectively;

f1 is the focal distance of each of the first, second, and third trim filters; and

f2 is the focal distance of the scrolling unit.

25. The method of claim 16, further comprising disposing first and second fly-eye lens arrays on a light path between the color separator and the light valve.

26. The method of claim 16, further comprising reducing the width of light incident upon the scrolling unit with a first cylindrical lens disposed in front of the scrolling unit, and returning the light transmitted by the scrolling unit to its original width with a second cylindrical lens disposed behind the scrolling unit.

27. The method of claim 26, further comprising disposing first and second fly-eye lens arrays on a light path between the color separator and the light valve.

28. The method of claim 27, further comprising disposing a relay lens on a light path between the second fly-eye lens and the light valve.

29. The method of claim 16, further comprising converting light emitted from the light source into light with a single polarization with a polarization conversion system disposed on a light path between the color separator and the light valve.

30. The method of claim 16, wherein the light valve comprises one of a liquid crystal display (LCD) and a liquid crystal on silicon (LCOS).